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EXAMINER				
CHOL YUK TING				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/531,260

Applicant(s)

TARBELL ET AL.

Examiner

YUK TING CHOI

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-93 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 46-93 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is in response to applicant's communication filed on 07/11/2008 in response to PTO Office Action mailed 06/17/2008. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results as follows.
2. In response to the last Office Action, Claims 46-49, 65, 68-71, 90 and 91 have been amended. No claims have been added or canceled. As a result, claims 46-93 are pending in this office action.

Response to Arguments

3. Applicant's arguments with respect to claims 46-93 have been fully considered but they are not persuasive and details are as follows:
 - a) Applicant's argument with respect to independent claims 46 and 68 states as "Bills et al. does not disclose generated copies of system objects, changed by the execution of the system function, for journaling".

In response to applicant's argument, Examiner respectfully disagrees because Examiner interpreted "generating copies of system objects" as "generating copies of changes of system objects". In view of Applicant's specification, Applicant clearly indicates the exit program may handle execution of the system function and capture **changes to system objects** occurring during the execution. A copies of changes are generated by the exit program and saved to disk for journaling (See page 3, line 35 and page 4, lines 1-3). Applicant further describes an alternative way to handle execution of the system function and captures changes to system objects during execution by using a dummy function, and again, Applicant discloses copies of the changes are generated by the dummy function (See page 4, lines 4-8). Hence, it

is entirely reasonable for Examiner to read "generating copies of system objects" as "generating copies of changes of system objects", thus, whether or not Bills is concerned with storing copies of objects after they have changed is unimportant and nearly irrelevant to the claimed invention.

b) Applicant's argument states as "Tanaka et al. and Bills et al. are directed to mutually exclusive environments such that there is no motivation to combine their teachings absent the use of impermissible hindsight".

In response to the applicant argument, Examiner respectfully disagrees because recognizes that references cannot be arbitrarily combined and there must be some reason why one of ordinary skill in the art would be motivated to make the proposed combination of references. *In re Nomiya, 184 USPQ 607 (CCPA 1975)*. However, the test for combine references is what the combination taken, as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin, 170 USPQ 209 (CCPA 1971)*. References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. *In re Bozek, 163 USPQ 545 (CCPA 1969)*. In this case, Examiner relied on Tanaka to teach the programming method, e.g. Tanaka discloses replaces [changes] execution from a normal or original function to a dummy function to perform other operations, discontinues the execution of the dummy function when the other operations are done and resume the execution of the normal or original function (See col 2, lines 45-60 and col 6, lines 8-32). The system described by Tanaka is a system written in C programming language with a C compiler (See col 1, lines 55-60). This system has a programming method ready to be implemented or operated in any environments that are well known in the art, for example, environments such as journaling, backup or replication or any other environments. A hardware system alone cannot be functional unless a

software program gives instruction to that hardware system. Therefore, Examiner asserts that the journaling system as described by Bills has to be implemented in a programming method. Also, the claimed language as it is recited is silent on executing in a specific, defined and meaningful higher functional level that would be understood to one of ordinary skill in the art, thus whether or not Tanaka's system is implemented at a lower function is irrelevant and unimportant to the claimed language. Examiner further notes that Tanaka's programming method can be implemented in a "higher level" for the sake of user or system preferences, and even though the "higher level" implementation, if its any different from the lower level, the system objects are necessarily somehow passed on to a lower level implementation to allow proper execution, and lastly, in either case, Tanaka sets out and achieves the same result as the claimed invention. Further, Applicant's journaling system is operated under OS/400 operating system and the commands or functions are written in a programming language, e.g. Standard C language. Therefore, it is entirely reasonable to combine the Tanaka, the programming method in to the journaling system of Bills.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 90-93 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." *State Street*, 149 F. 3d at 1373, 47 USPQ2d at 1602-02.

In claim 90, a "computer readable storage medium" is being recited; however, it appears that the medium would reasonably be interpreted by one of ordinary skill in the art may comprise signaling or carrier wave. Applicant's specification provides no explicit and deliberate definition of the computer readable storage medium, and it appears that such would reasonably be interpreted as containing signal or carrier wave, to transmit data or information. Therefore, it is not in the statutory categories. Similar problem exists in claims 91-93.

Specification

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The phase computer readable storage medium or storage media is not defined in the specification.

Claim Objections

7. Claims 47-67 are objected to because of the following informalities: "A method" is suggested to change to -the computer implemented method-.

Appropriate correction is required

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 46-56, 62-66, 68-78 and 84-93 are rejected under 35 U.S.C. 103(a) (Effective Filing Date: Oct. 14, 2002) as being unpatentable by Tanaka (US Patent 6,665,735, Effective Date: Oct. 5, 1998) in view of Bills (US PA Pub 2003/0204479 A1, Effective Date: Apr. 25, 2002).

Referring to claim 46, Tanaka discloses i) executing a dummy function in place of a system function when the system function is called (*See col 3, lines 60-65 and col 2, lines 48-55, replacing external or supplemental function for an operating system function*); ii) executing the system function under operation of the dummy function (*See col 2, lines 59 and col. 6 and lines 32, executing the external or supplemental function or process*); and iv) changed by execution of the system function and completing execution of the dummy function (*See col 6, lines 8-11, changed the original function func1 execution and completing execution of external or supplemental function func2*).

Tanaka does not explicitly disclose a method of journaling changes to system objects iii) generating copies of system objects for journaling.

Bills discloses disclose a method of journaling changes to system objects iii) generating copies of system objects for journaling (*See par 6, lines 8-11, keeping a record of changes made of objects that are journaled and other events that occur in the system*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: generating copies of system objects for journaling, as taught by Bills, in order to maintain data integrity in the event of an operating system crash or if the operating system is halted abnormally. When a system crash occurs, any lost data can be reconstructed from the information contained in the journal (*See par 6, lines 3-9*).

As to claim 47, Tanaka also discloses the dummy function by assigning a duplicate calling name to the dummy function and arranging the processor to pre-empt the execution of the system function (*See col 2, lines 53-58, functions having the same names as the replaced function is executed in place of an original system function*).

As to claim 48, Tanaka also discloses the dummy function includes an exit point and an exit program is registered for the exit point (*See col 7, lines 55-65, when original system func1 is called, the original system func1 routine passed control to the external or supplement func1, the external or supplement func1 takes control and adds the new routine or exit program for execution*).

As to claim 49, Tanaka also discloses a method wherein during operation of the dummy function the exit program is executed (*See col 7, lines 60-65 and col 6, lines 8-10, executing the external or supplement routine which added to original system function, whereas that external or supplement routine is a program*).

As to claim 50, Tanaka also discloses a method wherein the execution of the system function is handled by the exit program (*See col 7, lines 55-65, when original system func1 is called, the original system func1 routine passed control to the external or supplement func1, the original system func1 is handled by the external or supplement func1 routine or program*).

As to claims 51 and 52, Tanaka discloses the exit program (*See col 7, lines 50-65, the original system func1 routine passed control to the external or supplement func1 and executed the external or supplement routine which added to original system function, whereas that external or supplement routine is a program*).

Tanaka does not explicitly disclose a program captured the system objects and generates copies of the system objects.

Bills discloses the program captured the system objects and generates copies of the system objects (*See par 6, lines 8-11, capturing a record of changes made of objects that are journaled*),

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: captured the system objects and generates copies of the system objects, as taught by Bills, in order to maintains data integrity in the event of an operating system crash or if the operating system is halted abnormally. When a system crash occurs, any lost data can be reconstructed from the information contained in the journal (*See par 6, lines 3-9*).

As to claim 53, Tanaka also discloses the execution of the system function is handled by the dummy function (*See col 7, lines 55-65, when original system func1 is called, the original system func1 routine passed control to the external or supplement system func1, the original system func1 is handled by the external or supplement system func1 routine*).

As to claims 54 and 55, Tanaka discloses the dummy function and exit program (*See col 7, lines 50-65, the original system func1 routine passed control to the external or supplement func1 and executed the external or supplement routine, whereas that external or supplement routine is a program*).

Tanaka does not explicitly disclose the function captured system objects and generated copies of the system objects.

Bills disclose the function captured the system objects and generates copies of the system objects (*See par 6, lines 8-11 and par 24, lines 4-5, capturing a record of changes made of objects that are journaled*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: captured the system objects and generates copies of the system objects, as taught by Bills, in order to maintains data integrity in the event of an operating system crash or if the operating system is halted abnormally. When a system crash occurs, any lost data can be reconstructed from the information contained in the journal (*See par 6, lines 3-9*).

As to claim 56, Tanaka does not explicitly disclose wherein the copies of the system objects are saved to disk.

Bills disclose the copies of the system objects are saved to disk (*See par 12, lines 5-7 and par 27, lines 10-15, journaling the system objects and stored them in a disk*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: copies of the system objects are saved to disk, as taught by Bills, in order to maintains data integrity in the event of an operating system crash or if the operating system is halted abnormally. When a system crash occurs, any lost data can be reconstructed from the information contained in the journal (*See par 6, lines 3-9*).

As to claim 62, Tanaka in view of Bills also disclose the system objects are one or more of the set of program objects, configuration objects, queues, and space/memory mapped objects (*See Bills, par 7, lines 4-6*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: disclose the system objects are one or more of the set of program objects, configuration objects, queues, and space/memory mapped objects, as taught by Bills, in order to maintains data integrity in the event of an operating system crash or if the operating system is halted abnormally. When a system crash occurs, any lost data can be reconstructed from the information contained in the journal (*See par 6, lines 3-9*).

As to claim 63, Tanaka in view of Bills also disclose the changed system objects are those system objects that have been created, changed or deleted (*See Bills, par 5, lines 2-3 and par 6, lines 9-10, objects are created, generated, deleted and changed*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: the changed system objects are those system objects that have been created, changed or deleted, as taught by Bills, in order to maintains data integrity in the event of an operating system crash or if the operating system is halted abnormally. When a system crash occurs, any lost data can be reconstructed from the information contained in the journal (*See par 6, lines 3-9*).

As to claim 64, Tanaka in view of Bills inherently discloses wherein the system functions are OS/400 system functions (*See Bills, par 31, lines 1-2, the system functions are operating system functions, and one ordinary skill would recognize that operating system can be OS/400*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: the system functions are operating system functions, as taught by Bills, in order to maintains data integrity in the event of an operating system crash or if the operating system is halted abnormally. When a system crash

occurs, any lost data can be reconstructed from the information contained in the journal (*See par 6, lines 3-9*).

As to claim 65, Bills discloses i) executing the system function during which changes to system objects occur (*See par 12, lines 4-8 and par 31, lines 1-3, executing an operating system routine when system objects changes*); and ii) journaling changes to system objects during execution of the system function (*See par 6, lines 8-10, journaling objects changes*).

As to claim 66, Bills also discloses a method as claimed in claim 65 wherein changes of system objects are journal by integrating journaling commands into the code of the system functions(*See par 31, lines 1-5, the journaling routine is a program included in the operating system modules*).

Referring to claim 68, Tanaka discloses a system for journaling in a database journal changes to system objects including: i) a processor (*See col 3, lines 60-64, a CPU processor, also see Fig. 1, item 1*) adapted to execute a dummy function in place of a system function when the system function is called (*See col 3, lines 60-65 and col 2, lines 48-55, replacing external or supplemental function for an operating system function*) wherein the dummy function executes the system function (*See col 2, lines 59 and col, 6 and lines 32, executing the external or supplemental function or process* and ii) memory for use by the processor during execution (*See col 3, lines 60-64, a main memory for use by the CPU processor and Fig. 1, item 2*).

Tanaka does not explicitly disclose generates copies of system objects for journaling.

Bills discloses disclose generates copies of system objects for journaling (*See par 6, lines 8-11, keeping a record of changes made of objects that are journaled and other events that occur in the system*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: generates copies of system objects for journaling, as taught by Bills, in order to maintains data integrity in the event of an operating system crash or if the operating system is halted abnormally. When a system crash occurs, any lost data can be reconstructed from the information contained in the journal (See *par 6, lines 3-9*).

As to claims 69-78, they recite essentially the same limitations as claims 47-56; therefore, they are rejected based on the same reasons as set forth in claims 47-56.

As to claims 84-86, they recite essentially the same limitations as claims 62-64; therefore, they are rejected based on the same reasons as set forth in claims 62-64.

As to claim 87, Tanaka in view of Bills inherently discloses wherein the processor is operating under the OS/400 operating system (*See Bills, par 31, lines 1-2, the system functions are operating system functions, and one ordinary skill would recognize that operating system can be OS/400, also see col 5, lines 4-5, processing unit*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: the processor is operating under the operating system, as taught by Bills, in order to control system operation.

As to claim 88, Tanaka also discloses a computer system for effecting the method of claim 46 (*See col 3, lines 60-61*).

As to claim 89, Bills also discloses a computer system for effecting the method of claim 65 (*See par 24, lines 1-4*).

As to claim 90, Tanaka also discloses a computer readable storage medium tangibly storing software for executing the method of claim 46 (*See col 3, lines 25-26*).

As to claim 91, Bills also discloses a computer readable storage medium tangibly storing software for effecting the method of claim 65 (See par 28, lines 6-8).

As to claim 92, Tanaka also discloses storage media containing software as claimed in claim 90 (*See col 4, lines 13-15, the software is installed in main memory ROM storage device*).

As to claim 93, Bills also discloses storage media containing software as claimed in claim 91 (*See par 28, lines 5-6, computer-readable media provides storage*).

10. Claims 57-59 and 79-81 are rejected under 35 U.S.C. 103(a) (Effective Filing Date: Oct. 14, 2002) as being unpatentable by Tanaka (US Patent 6,665,735, Effective Date: Oct. 5, 1998) in view of Bills (US PA Pub 2003/0204479 A1, Effective Date: Apr. 25, 2002) and further in view of Owen (US PA Pub 2003/0217031 A1, Effective Date: May. 16, 2002).

As to claim 57, Tanaka in view of Bills do not explicitly disclose the copies of the system objects are streamed to a database system for journaling.

Owen discloses the copies of the system objects are streamed to a database system for journaling (*See par 34, lines 1-3 and lines 8-14, sending the journal entries to the journal receiver and send to target system, then applies the journal entries to the target system, see also par 35, lines 7-8 and Fig. 5*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise: the copies of the system objects are streamed to a database system for journaling, as taught by Owen, in order to send journal entries from one system to another to assure data integrity of the information system (See par 6, lines 1-3).

As to claim 58 and 59, Tanaka in view of Bills do not explicitly disclose the database system is incorporated with a replication system, replicates the copies of the system objects to one or more local or remote databases.

Owen disclose the database system is incorporated with a replication system, replicates the copies of the system objects to one or more local or remote databases (*See par 34, lines 13-18 and Fig. 5, replicating the received journal entries from the journal applying software, the replicated files are reflected in local database*).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise the database system is incorporated with a replication system, replicates the copies of the system objects to one or more local or remote databases, as taught by Owen, in order to send journaled changes from one system to another to assure data integrity of the information system and to minimize excessive journal data that need to be send (*See par 6, lines 1-6*).

As to claims 79-81, they recite essentially the same limitations as claims 57-59; therefore, they are rejected based on the same reasons as set forth in claims 57-59

11. Claims 60, 61, 82 and 83 are rejected under 35 U.S.C. 103(a) (Effective Filing Date: Oct. 14, 2002) as being unpatentable by Tanaka (US Patent 6,665,735, Effective Date: Oct. 5, 1998) in view of Bills (US PA Pub 2003/0204479 A1, Effective Date: Apr. 25, 2002) and further in view of Suzuki (US Patent 6,829, 768 B1, Effective Date: Sept. 29, 1998).

As to claims 60 and 61, Tanaka in view of Bills do not explicitly disclose wherein messages or exceptions generated by the system function are captured into a queue and the messages or exceptions are forward back to the process by a function.

Suzuki discloses messages or exceptions generated by the system function are captured into a queue and the messages or exceptions are forward back to the original process, *(See col 1, lines 50-60 and col 4, lines 33-37, the adaptor function has a queue manager to captured messages in a queue and forward back to the SDL process, the SDL process is executing operation system tasks).*

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise messages or exceptions generated by the system function are captured into a queue and the messages or exceptions are forward back to the process by a function, as taught by Suzuki, in order to integrate an external or supplement environment with an original system environment to expand the operations or library of the original system environment and maintain communication between the two environments *(See col 1, lines 20-22 and lines 42-27).*

As to claims 82 and 83, they recite essentially the same limitations as claims 60 and 61; therefore, they are rejected based on the same reasons as set forth in claims 60 and 61

12. Claim 67 is rejected under 35 U.S.C. 103(a) (Effective Filing Date: Oct. 14, 2002) as being unpatentable by Bills (US PA Pub 2003/0204479 A1, Effective Date: Apr. 25, 2002) in view of Cloud (US Patent 6,253,369 B1, Effective Date: Jun. 26,2001).

As to claim 67, Bills does not explicitly disclose wherein changes to system objects are journeyed by associating exit points.

Cloud discloses changes to system objects are journaled by associating exit points with the system function and calling an exit program during execution of the system function *(See col*

8, lines 27-30 and lines 35-38, allows to custom user exit points for journaling and calling a custom-coded program during executing the system workflow).

Hence, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Tanaka's system to comprise journaled by associating exit points with the system function and calling an exit program during execution of the system function, as taught by Cloud, in order to permit integration of two different system environment with a minimum of integration effort (*See col 3, lines 20-23*).

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. 1.111 (C) to consider these references fully when responding to this action.

15. The examiner requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claims. That is indicate support for

newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuk Choi whose telephone number is (571) 270-1637. The examiner can normally be reached on 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Ronces can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. C./
Examiner, Art Unit 2164

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/Sathyanarayan Pannala/

Primary Examiner, Art Unit 2164